

**IN THE CLAIMS:**

Please add new claims 106-131, as follows:

106. (New) An isolated DNA molecule that encodes a 5-enolpyruvylshikimate-3-phosphate synthase (EPSPS) enzyme having the sequence of SEQ ID NO:70.

107. (New) A recombinant, double-stranded DNA molecule comprising in sequence:

a) a promoter that functions in plant cells to cause the production of an RNA sequence;

b) a structural DNA sequence that causes the production of an RNA sequence that comprises the sequence encoding an EPSPS enzyme comprising SEQ ID NO:70; and

c) a 3' non-translated region that functions in plant cells to cause the addition of a stretch of polyadenyl nucleotides to the 3' end of the RNA sequence.

108. (New) The DNA molecule of claim 107, wherein the structural DNA sequence further causes the production of an RNA sequence that encodes an amino-terminal chloroplast transit peptide that is fused to the EPSPS enzyme.

109. (New) The DNA molecule of claim 108, wherein the chloroplast transit peptide has the sequence of SEQ ID NO:11 or SEQ ID NO:15.

110. (New) The DNA molecule of claim 107, wherein the promoter is a plant DNA virus promoter.

111. (New) The DNA molecule of claim 110, wherein the promoter is a CaMV35S promoter or an FMV35S promoter.

112. (New) The DNA molecule of claim 107, wherein the 3' non-translated region is a NOS 3' or an E9 3' non-translated region.

113. (New) A method of producing genetically transformed plants that are tolerant toward glyphosate herbicide, comprising:

a) inserting into the genome of a plant cell a recombinant, double-stranded DNA molecule comprising:

i) a promoter that functions in plant cells to cause the production of an RNA sequence;

ii) a structural DNA sequence that causes the production of an RNA sequence that comprises the sequence encoding an EPSPS enzyme comprising SEQ ID NO. 70; and

iii) a 3' non-translated DNA sequence that functions in plant cells to cause the addition of a stretch of polyadenyl nucleotides to the 3' end of the RNA sequence;

b) obtaining a transformed plant cell; and

- c) regenerating from the transformed plant cell a genetically transformed plant that has increased tolerance to glyphosate herbicide.

114. (New) The method of claim 113, wherein the structural DNA further causes the production of an RNA sequence that encodes an amino-terminal chloroplast transit peptide that is fused to the EPSPS enzyme.

115. (New) The method of claim 114, wherein the chloroplast transit peptide has the sequence of SEQ ID NO:11 or SEQ ID NO:15.

116. (New) The method of claim 113, in which the promoter is a plant DNA virus promoter.

117. (New) The method of claim 116, in which the promoter is a CaMV35S promoter or an FMV35S promoter.

118. (New) The method of claim 113, wherein the 3' non-translated DNA sequence is a NOS 3' or an E9 3' non-translated sequence.

119. (New) A plant cell comprising an EPSPS enzyme having the sequence of SEQ ID NO:70.

120. (New) A plant comprising an EPSPS enzyme having the sequence of SEQ ID NO:70.

121. (New) The plant of claim 120, wherein the plant is corn, wheat, rice, barley, soybean, cotton, sugarbeet, oilseed rape, canola, flax, sunflower, potato, tobacco, tomato, alfalfa, poplar, pine, eucalyptus, apple, lettuce, peas, lentils, grape or turf grass.

122. (New) The plant of claim 121, wherein the plant is corn.

123. (New) The plant of claim 121, wherein the plant is soybean.

124. (New) The plant of claim 121, wherein the plant is canola.

125. (New) The plant of claim 121, wherein the plant is cotton.

126. (New) A seed of a plant of claim 120, wherein the seed comprises an EPSPS enzyme having the sequence of SEQ ID NO:70.

127. (New) The seed of claim 126, wherein the seed is corn, wheat, rice, barley, soybean, cotton, sugarbeet, oilseed rape, canola, flax, sunflower, potato, tobacco, tomato, alfalfa, poplar, pine, eucalyptus, apple, lettuce, peas, lentils, grape or turf grass seed.

128. (New) The seed of claim 127, wherein the seed is corn seed.

129. (New) The seed of claim 127, wherein the seed is soybean seed.

130. (New) The seed of claim 127, wherein the seed is canola seed.

131. (New) The seed of claim 127, wherein the seed is cotton seed.